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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,108	01/03/2005	Achim Brenk	R.302844-1	6989
2119	7590	03/24/2006		
RONALD E. GREIGG GREIGG & GREIGG P.L.L.C. 1423 POWHATAN STREET, UNIT ONE ALEXANDRIA, VA 22314			EXAMINER MCGRAW, TREVOR EDWIN	
			ART UNIT	PAPER NUMBER
			3752	

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/520,108

Applicant(s)

BRENK ET AL.

Examiner

Trevor McGraw

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-52 is/are pending in the application.
- 4a) Of the above claim(s) 46-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-39 is/are rejected.
- 7) ☒ Claim(s) 28 and 40-45 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because feature "32"-Inlet Throttle is not shown in detail. Examiner suggests that applicant put "32" in figure 4 to show feature in better detail. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "6" and "36" have both been used to designate central bore. "36" does not appear to be central to the holding body "5". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not provide any feature that can be acted upon by a force to open and close (raise and lower) the valve element "11" from its seat. See paragraph 34 on pages 9-10.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 27 recites the limitation "closing element" in line 5, 9 and 10. There is insufficient antecedent basis for this limitation in the claim. Examiner suggests making positive recitation of limitation in claim.

Examiner's Comment

5. In viewing the claims, Examiner notes difficulty created by potential allowable generic claim as one of two alternatives as being allowable as part of claim is drawn to a non-elected species. Examiner suggests that applicant rewrite claim 27 as two separate independent claims each covering one of the alternatives in claim 27 and amend each depending claims accordingly.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 27-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Radue (US Patent 6,298,822).

7. In regard to claims 27-29, 31, 34, 36, 38, Radue (6,298,822) teaches a fuel delivery system for an internal combustion engine that contains a valve body (110), a control chamber which is located above the nozzle (184) whose pressure can be relieved upon nozzle actuation where the flow of fuel passes through throttle fuel inlets (172) into the control chamber and pressure relieved out of the first outlet throttle (122a) whose closing member (164) is actuated by an actuator (102a) where the valve body (110) is connected to a holding body (190) that has a nozzle body (180) connected to it that includes a valve element (184) and an additional actuator (102b) that has the identical features of the first actuator (102a) where the throttles of 102a and 102b are disposed opposite from each other inside a valve body (110) where the throttles are located in inserts (170). Inlet throttle (114) is provided in an interchangeable insert piece (100) that is affixed to the valve body (180) by means of a high pressure fitting (104a and 104b) where the closing elements (164) are embodied as spherical. The fuel injector system of Radue also teaches the holding body (190) that is fastened to the valve body (110).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 30, 32, 33, 35, 37 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Radue (US Patent Number 6,298,822). In regard to claims 30, 32-35, 37 and 39, Radue as described above, it would have been obvious to one with ordinary skill in the art at the time of the present invention to fasten the inserts (170) to the valve body (110) by means of clamping screws as this practice is well known in the art of fuel injectors. It is also obvious to one with ordinary skill in the art at the time of the present invention to fasten the valve body to the holding body with a clamping nut and to change the orientation of the inlet throttles of the control chambers to 90° in relation to the first and second outlet throttles different from Radue which teaches an angle orientation different from 90° and to embody the closing elements (164) as conical bodies in lieu of spherical bodies. It is further obvious to one with ordinary skill in the art at the time of the present invention to embody the first and second actuators as piezoelectric actuators in lieu of solenoid actuators.

Claim Objections

9. Claim 28 is objected to because of the following informalities: "Valve Body" in line 3 of claim 28 is designated as 29 in lieu of 2 as prescribed in the specification.

Appropriate correction is required.

10. Claims 40-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Paul et al. (5,722,373), Lei (6,745,958), Touchette et al. (6,073,862), Yoshizu (5,477,834), Watson (4,185,779), Sturman et al. (5,954,030), Lei (6,845,926), Struman (5,460,329).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trevor McGraw whose telephone number is (571) 272-7375. The examiner can normally be reached on Monday-Friday (2nd & 4th Friday Off).

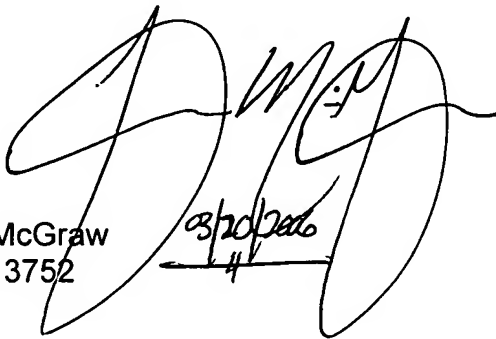
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (571) 272-4919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3752

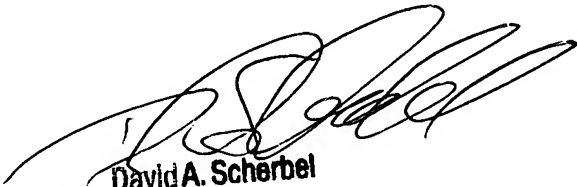
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Trevor McGraw
Art Unit 3752

TEM



3/20/2016
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